

Vol. 24, No. 48 • www.PetroleumNews.com

A weekly oil & gas newspaper based in Anchorage, Alaska

LAND & LEASING

page USGS North Slope assessment gears up; results expected out in January

Week of December 1, 2019 • \$2.50

Passing the torch at Prudhoe Bay; Weiss to remain Alaska resident

Janet Weiss, president of BP Alaska, plans to remain in the state after BP's Alaska assets are transferred in a sale to Hilcorp, she said in remarks to the Resource Development Council's Alaska Resources Conference Nov. 20.

"I came to this state many years ago; I fell in love with the rocks and reservoirs, but I learned that there's a lot more to Alaska ... it's beauty ... I'm thankful," she said. "Our kids were born here; we've got some very close friends that live here, and Troy and I are planning on staying here."

"This is a time for us to think about the things that we've created — innovation, a community we've built together — but it's a lot more than that," she said. "Alaska has helped make BP — big BP, and BP Alaska. We would not be the com-

see PASSING THE TORCH page 12

Alaska's economy turned corner in 4th qtr 2018, now in recovery

In 2018 economist Neal Fried told the Resource Development Council's annual meeting that the state's current recession, only the third in its history, had become the longest at three years.

The story is different this year. Fried, with the Alaska Department of Labor and Workforce Development, said Nov. 20 at this year's annual meeting that the state's economy has turned around. That turnaround started in the last quarter of 2018, when employment numbers started to be positive, he said.

The big story for 2019 is that the economy is in recovery, up by half a percent, compared to down by half a percent last

see **STATE ECONOMY** page 12

Trudeau overhauls cabinet; new lineup to oversee resource projects

The Canadian government of Prime Minister Justin Trudeau has assembled the pieces for a relaunch after four years in office, though it's far from clear whether he has engaged in more than window dressing.

For the Western Canada-based energy industry the cabinet shuffle introduces a new natural resources minister (Seamus Regan), a new environment minister (Jonathan Wilkinson), a new cabinet post

with sole responsibility for dealing with the Prairie provinces

JUSTIN TRUDEAU

the reserve could be opened for oil and gas leasing. The plan currently in place was issued in 2013 and

By KRISTEN NELSON

Petroleum News

acres offered, the federal Bureau of Land Management's draft environmental impact state-

ment for a new integrated activity plan for the

National Petroleum Reserve-Alaska, released Nov.

a new plan Nov. 20, 2018, following up on an

order by then-Interior Secretary Ryan Zinke at the

end of May 2017 which required a rework of the

existing NPR-A plan to determine if more land in

The agency issued a notice of intent to prepare

21, is drawing a range of reaction.

W ith alternatives from the status quo to fewer acres offered for leasing to more

BLM said that under all alternatives, there would be "a potential community road connecting Nuiqsut and Utqiagvik that is routed north of Teshekpuk Lake."

places much of the northern part of NPR-A off limits to oil and gas leasing and development. BLM said the secretary's order responded to requests from the state and the North Slope Borough "to increase opportunities for infrastructure and to help build capacity to support their aligned goals in light or recently increased activity on Alaska's North Slope."

"With advancement in technology and

see NPR-A PLAN page 11

• EXPLORATION & PRODUCTION

ERD rig being reassembled

BLM releases NPR-A plan

Alternatives include status quo, less land for leasing, 2 proposals with more land

ConocoPhillips looks to set new drilling records with new North Slope rig

By KAY CASHMAN

Petroleum News

The Doyon 26 extended reach drilling rig, the largest mobile land rig in North America, is being reassembled in Deadhorse for use on the North Slope by ConocoPhillips, which commissioned it with Doyon Drilling in October 2016.

In its 2019 plan of development, ConocoPhillips said it plans to drill six wells at its Fiord West field with the new ERD rig starting early in second quarter 2020. Fiord West is expected to produce 20,000 barrels of oil per day gross at its peak.

Originally assembled in Nisku, Alberta, the rig was broken down into 267 separate tractor-trailer

"It's been arriving in loads the entire fall and the team is beginning the reassembly process," ConocoPhillips Alaska spokeswoman Natalie Lowman told Petroleum News Nov. 22.

loads that began their 2,400 mile journey to Deadhorse in July.

"It's been arriving in loads the entire fall and the team is beginning the reassembly process," ConocoPhillips Alaska spokeswoman Natalie Lowman told Petroleum News Nov. 22.

"When all the pieces arrive, we'll put it back

GOVERNMENT

(Jim Carr), along with a deputy prime minister (Chrystia

see **CABINET OVERHAUL** page 10

Flurry of LNG action with BC, Quebec projects ready for review

Canada's struggles to enter the global LNG sector are faced with a pivotal environmental test at the same time Alberta and British Columbia surprisingly find themselves in "absolute alignment" to seek a market foothold in Asia.

A pair of proposed projects — a C\$14 billion Gazodug proposal to ship 11 million metric tons a year from Saguenay, Quebec, to unidentified markets and the First Nation-led Cedar LNG proposal to ship 4 million MT/year to Pacific outlets — are about to embark on the first environmental review under the Canadian government's new Bill C-69.

Gazodug includes plans for a 470-mile pipeline to draw natural gas from pipeline in Ontario to be liquefied by GNL Quebec.

see LNG ACTION page 12

Ocean mapping of Arctic

Presidential memorandum to boost charting of Alaska shoreline and nearshore

By STEVE SUTHERLIN

Petroleum News

A ccording to Alaska's congressional delegation, Alaska will benefit greatly from a Nov. 19 memorandum by President Donald J. Trump, which directs federal agencies to develop a national strategy to map the U.S. Exclusive Economic Zone and a strategy to map the Alaska coastline.

The Memorandum on Ocean Mapping of the United States Exclusive Economic Zone and the Shoreline and Nearshore of Alaska calls on the administrator of the National Oceanic and Atmospheric Administration, the state of Alaska and the Alaska Mapping Executive Committee to develop a proposed strategy to map the shoreline "Exploring the mysteries of the sea can also inspire the next generation of scientists in the fields of physics, biology, geology, chemistry, math and engineering." —retired Navy Rear Adm. Tim Gallaudet, assistant secretary of commerce for oceans and atmosphere and deputy administrator of NOAA

and nearshore of Alaska.

The director of the Office of Science and Technology Policy and the chairman of the Council on Environmental Quality are directed to

see OCEAN MAPPING page 9

EXPLORATION & PRODUCTION

PBU G&I waste treatment permit noticed

By KRISTEN NELSON

Petroleum News

The Alaska Department of Environmental Conservation said the permit application for operation of a second grind and inject unit and accompanying storage cells at Drill Site 4 at Prudhoe Bay is complete and it is proposing to issue a comprehensive solid waste treatment permit encompassing both G&I facilities and related storage cells.

Prudhoe Bay operator BP Exploration (Alaska) applied to the Alaska Department of Natural Resources' Division of Oil and Gas in April to construct a new gravel pad and install an updated Class 1 waste disposal facility between Drill Site 4 and the Fire Training Area at Prudhoe, describing the 2.58-acre gravel pad as accommodating an update Class 1 waste facility which would replace two existing facilities no longer adequate for the unit's needs.

The division approved BP's plan for a gravel pad expansion and Class 1 waste disposal facility installation

in July and noted in its approval that piping modifications would occur in the existing G&I facility on DS4 and at the proposed waste disposal facility, WDF. Materials staging on pad was scheduled to start in July, gravel pad and culvert installation in August, followed by vertical support member installation, gravel pad infrastructure installation in September and module and solid storage tank installation in November.

ADEC permit

In its Nov. 19 notice, ADEC said the comprehensive permit would include the existing DS-4 G&I facility and the GPB G&I facility, which will be operated for treatment and disposal of drilling waste and nonhazardous waste generated from oil and gas production activities at Prudhoe.

In a November solid waste permit application to ADEC, BP said the new facility was to be called the GPB Waste Disposal Facility and requested that the WDF permit application be combined with the existing DS4 G&I facility permit. "The G&I facility has a future planned phase change from 'active status' to 'dormant status' as the new WDF comes on line," BP said, with the two facilities to run concurrently until G&I goes into dormant status.

The ADEC application is dated Nov. 8 and BP said it was being sent 45 days prior to the planned beginning of disposal processes at WDF.

BP said ground and slurried waste would be disposed of via underground injection control wells (GNI-02A, GNI-03 and GNI-4) on the Surfcote Pad in accordance with permits from the U.S. Environmental Protection Agency and the Alaska Oil and Gas Conservation Commission, with the ultimate disposal zone authorized by the permits below the SV1 Sagavanirktok formation and above the CM2 Colville/Seabee shale formation.

BP said the WDF is a self-contained plant including a ball mill that grinds and slurries oilfield solids for disposal by underground injection; the WDF also includes two material transfer stations on the DS4 pad used for temporary storage of waste prior to processing.

Contact Kristen Nelson at knelson@petroleumnews.com

contents

ON THE COVER

BLM releases NPR-A plan

Alternatives include status quo, less land or more leasing acreage

ERD rig being reassembled

Conoco looks to set new drilling records with new North Slope rig

Ocean mapping of Arctic

Presidential memorandum to boost charting of Alaska shoreline

Passing the torch at Prudhoe Bay; Weiss to remain Alaska resident

Alaska's economy turned corner in 4th qtr 2018, now in recovery

Trudeau overhauls cabinet; new

lineup to oversee resource projects

Flurry of LNG action with BC,

Quebec projects ready for review

EXPLORATION & PRODUCTION

2 PBU G&I waste treatment permit noticed

4 USGS North Slope assessment gearing up

Team is finalizing assessment units; anticipates publishing results of its estimation of undiscovered oil and gas in January

Petroleum News Alaska's source for oil and gas news

- **5** Accumulate's Charlie 1 ops plan approved
- **6 October production up 7% from September**

Alaska North Slope crude, NGLs, average 508,751 bpd, up 33,103 bpd, mostly from Prudhoe; Cook Inlet averages 13,613 bpd, up 1%

7 US rig count drop continues, down 3 to 803

GOVERNMENT

7 BLM sets meeting schedule for NPR-A IAP





Petroleum Alaska Rig Report

Rig Owner/Rig Type				
	Rig No.	Rig Location/Activity	Operator or Status	The Alaska Rig Report as of Nov. 26, 2019. Active drilling companies only listed.
	Alaska	a Rig Status		TD = rigs equipped with top drive units WO = workover operatio
	North	Slope - Onshore		CT = coiled tubing operation SCR = electric rig
Ooyon Drilling		·		This rig report was prepared by Marti Reeve
Dreco 1250 UE	14 (SCR/TD)	Milne Point, M-26	Hilcorp	
Preco 1000 UE	16 (SCR/TD)	Standby		
Dreco D2000 Uebd	19 (SCR/TD)	Standby		
AC Mobile	25	Alpine, CD5-26	ConocoPhillips	
DIME 2000	141 (SCR/TD)	Alpine, CD4-594	ConocoPhillips	
	142 (SCR/TD)	Kuparuk 3R-105	ConocoPhillips	
rsm 700	Arctic Fox #1	Standby	·	
lilcorp Alaska LLC	Rig No.1	Milne Point	Hilcorp Alaska LLC	
Kuukpik Drilling	5	Deadhorse	Available	
	5	Deadhorse	Available	
Nabors Alaska Drilling				
AC Coil Hybrid	CDR-2 (CTD)	Deadhorse, F-38A	BP	
AC Coil	CDR-3 (CTD)	Kuparuk, 2M-21	ConocoPhillips	
Dreco 1000 UE	7-ES (SCR-TD)	Kuparuk, mobilization	Oil Search	
Mid-Continental U36A	3-S	Stacked	Available	
Dilwell 700 E	4-ES (SCR)	Stacked	Available	
Dreco 1000 UE	9-ES (SCR/TD)	Stacked	ConocoPhillips	
Oilwell 2000 Hercules	14-E (SCR)	Deadhorse	Available	
Oilwell 2000 Hercules	16-E (SCR/TD)	Stacked	Brooks Range Petroleum	
Oilwell 2000 Canrig 1050E	27-E (SCR-TD)	Stacked	Glacier Oil & Gas	
Oilwell 2000	33-E	Deadhorse	Available	
Academy AC Electric CANRIG	99AC (AC-TD)	Stacked	Repsol	
OIME 2000) 12 Acre Pad, stacked	ENI	
Academy AC electric CANRIG			Oil Search	
Academy AC electric Heli-Rig	106AC (AC-TD)		Great Bear Petroleum	
Nordic Calista Services				
Superior 700 UE	1 (SCR/CTD)	Deadhorse	Available	
Superior 700 UE	2 (SCR/CTD)	Deadhorse, stacked	Available	
Ideco 900	2 (SCR/CTD) 3 (SCR/TD)	Charlie #1		
		Oliktok Point	Accumulate Energy Alaska	
Rig Master 1500AC	4 (AC/TD)	UNKLOK POINT	ENI	
Parker Drilling Arctic Operating	LLC			
NOV ADS-10SD	272	Prudhoe Bay, S-129A	BP	
NOV ADS-10SD		Stacked in Deadhorse	Available	
	North	Slope - Offshore		
BP				
Top Drive, supersized	Liberty rig	Inactive	BP	
Doyon Drilling				
	15 (SCR/TD)	Spy Island, SP12-SE3	ENI	
Sky top Brewster NE-12	15 (SCR/TD)	Spy Island, SP12-SE3	ENI	
Sky top Brewster NE-12 Nabors Alaska Drilling				
Sky top Brewster NE-12 Nabors Alaska Drilling	15 (SCR/TD) 19AC (AC-TD)	Spy Island, SP12-SE3 Oooguruk Stacked	ENI Caelus Energy LLC	
Sky top Brewster NE-12 Nabors Alaska Drilling				
Sky top Brewster NE-12 Nabors Alaska Drilling				
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000	19AC (AC-TD)			
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC	19AC (AC-TD) Cook Inl	Oooguruk Stacked let Basin – Onshore	Caelus Energy LLC	
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC	19AC (AC-TD) Cook Inl	Oooguruk Stacked let Basin – Onshore		
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig	19AC (AC-TD) Cook Inl	Oooguruk Stacked let Basin – Onshore	Caelus Energy LLC Crest Alaska Operating LLC	
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas	19AC (AC-TD) Cook Inl BlueCrest Rig #1	Oooguruk Stacked let Basin – Onshore Stacked Blue	Caelus Energy LLC Crest Alaska Operating LLC	
Sky top Brewster NE-12 Nabors Alaska Drilling DIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC	19AC (AC-TD) Cook Inl BlueCrest Rig #1	Oooguruk Stacked let Basin – Onshore Stacked Blue	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas	
Sky top Brewster NE-12 Nabors Alaska Drilling DIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC	19AC (AC-TD) Cook Inl BlueCrest Rig #1	Oooguruk Stacked let Basin – Onshore Stacked Blue	Caelus Energy LLC Crest Alaska Operating LLC	
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Workd	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas	
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Workd	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas	
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Workd	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas	
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC	Baker Hugher, North America, rotary via, counted
Sky top Brewster NE-12 Nabors Alaska Drilling DIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC DECO H-37 Hilcorp Alaska LLC ISM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Workd Stacked in the Peak yard Stacked Stacked Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available	With the second seco
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169	Oooguruk Stacked let Basin – Onshore Stacked Blue West McArthur River Unit Workd Stacked in the Peak yard Stacked Stacked Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year United States 803 806 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Stacked Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD)	Oooguruk Stacked Jet Basin – Onshore Stacked Blue West McArthur River Unit Workd Stacked in the Peak yard Stacked Stacked Stacked Platform C, Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year United States 803 806 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51	Oooguruk Stacked Jet Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Platform C, Stacked Stacked Stacked Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD)	Oooguruk Stacked Jet Basin – Onshore Stacked Blue West McArthur River Unit Workd Stacked in the Peak yard Stacked Stacked Stacked Platform C, Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada137134Gulf of Mexico2222
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51	Oooguruk Stacked Jet Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Platform C, Stacked Stacked Stacked Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada137134Gulf of Mexico2222Highest/Lowest
Sky top Brewster NE-12 Nabors Alaska Drilling DIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC DECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Het Basin – Offshore Platform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked	Caelus Energy LLC Acrest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada137134Gulf of Mexico2222Highest/LowestUS/Highest4530December 19
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51	Oooguruk Stacked Jet Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Platform C, Stacked Stacked Stacked Stacked	Caelus Energy LLC Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada137134Gulf of Mexico2222Highest/Lowest
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Het Basin – Offshore Platform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked	Caelus Energy LLC Acrest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada137134Gulf of Mexico2222Highest/LowestUS/Highest4530December 19US/Lowest404May 20
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked	Crest Laska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada1371341Gulf of Mexico222222Highest/Lowest4530December 19US/Lowest404May 20*Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Het Basin – Offshore Platform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tend	Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling DIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC DECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack-	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked	Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack- Furie Operating Alaska	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Het Basin – Offshore Platform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tend	Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC	Nov. 22Nov. 15YearUnited States8038061Canada1371341Gulf of Mexico222222Highest/Lowest4530December 19US/Lowest404May 20*Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack- Furie Operating Alaska Randolf Yost jack-up	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tene where pre mobilization work is l	Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Available	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack- Furie Operating Alaska Randolf Yost jack-up Glacier Oil & Gas	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tene where pre mobilization work is I Nikiski, OSK dock	Caelus Energy LLC Cover Glacier Oil & Gas Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Available ders Hilcorp Alaska LLC being performed Available	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack- Furie Operating Alaska Randolf Yost jack-up Glacier Oil & Gas	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tene where pre mobilization work is l	Crest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Available	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack- Furie Operating Alaska Randolf Yost jack-up Glacier Oil & Gas	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tene where pre mobilization work is I Nikiski, OSK dock	Caelus Energy LLC Arcrest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Kavailable Available	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1
Sky top Brewster NE-12 Nabors Alaska Drilling OIME 1000 BlueCrest Alaska Operating LLC Land Rig Glacier Oil & Gas All American Oilfield LLC IDECO H-37 Hilcorp Alaska LLC TSM-850 TSM-850 Hilcorp Alaska LLC National 110 Nordic Calista Services Land Rig Spartan Drilling Baker Marine ILC-Skidoff, jack- Furie Operating Alaska Randolf Yost jack-up Glacier Oil & Gas	19AC (AC-TD) Cook Inl BlueCrest Rig #1 Rig 37 AAO 111 147 169 Cook Inl C (TD) Rig 51 Rig 56 36 (TD)	Oooguruk Stacked Het Basin – Onshore Stacked Blue West McArthur River Unit Worke Stacked in the Peak yard Stacked Stacked Stacked Hatform C, Stacked Steelhead Platform, Stacked Monopod A-13, stacked Kenai, stacked Spartan 151, stacked at Rig Tene where pre mobilization work is I Nikiski, OSK dock	Caelus Energy LLC Arcrest Alaska Operating LLC over Glacier Oil & Gas Available Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Hilcorp Alaska LLC Kavailable Available	Nov. 22 Nov. 15 Year United States 803 806 1 Canada 137 134 1 Gulf of Mexico 22 22 22 Highest/Lowest 4530 December 1 US/Highest 4530 December 1 US/Lowest 404 May 24 *Issued by Baker Hughes since 1

JUDY PATRIC

EXPLORATION & PRODUCTION

USGS North Slope assessment gearing up

Team is finalizing assessment units; anticipates publishing results of its estimation of undiscovered oil and gas in January

By ALAN BAILEY

For Petroleum News

aving conducted a meeting in Anchorage, gathering input to the assessment process, the U.S. Geological Survey is completing its plans for its new evaluation of undiscovered oil and gas

resources in the central North Slope. The assessment team plans to finalize its identification of assessment units to use for the evaluation around Dec. 2, with the intent to be able to release the results of the assessment in DAVE HOUSEKNECHT



USGS January, geologist Dave Houseknecht told Petroleum News in a Nov. 25 interview. The assessment will encompass North Slope lands between the eastern border of the National Petroleum Reserve-Alaska and the western border of the Arctic National Wildlife Refuge, as well as nearshore state waters of the Beaufort Sea

An assessment unit consists of an oil and gas play associated with specific geologic features. And, as in previous assessments, the USGS will evaluate potential volumes of undiscovered, technically recoverable

resources in each unit, using available geologic information from sources including well and seismic data. A statistical analysis will result in an estimated range of possible resource volumes, with the breadth of that range providing insights into the uncertainty of the resource estimates. Economic factors will not be considered.

Planned assessments

The USGS last conducted an assessment of the central North Slope in 2005. The new assessment results from an administrative order from then-Interior Secretary Ryan Zinke in May 2017, requiring new assessments across the entire North Slope region. USGS has already published a new assessment for the NPR-A and had planned to next conduct an assessment of the ANWR coastal plain. However, because of the opening of the ANWR coastal plain for oil and gas lease sales, the plan now is to delay the ANWR assessment in expectation of new 3D seismic data becoming available - currently the only seismic available for ANWR is old 2D data, Houseknecht explained.

The plan had also been to complete the central North Slope assessment by the end of this year, but a government shutdown earlier in the year had delayed the process, Houseknecht said.



Petro		PetroleumNews.com
Kay Cashman	PUBLISHER & FOUNDER	ADDRESS
Mary Mack	CEO & GENERAL MANAGER	P.O. Box 231647 Anchorage, AK 99523-1647
Kristen Nelson	EDITOR-IN-CHIEF	NEWS 907.522.9469
Susan Crane	ADVERTISING DIRECTOR	publisher@petroleumnews.com
Heather Yates	BOOKKEEPER	CIRCULATION 907.522.9469 circulation@petroleumnews.com
Marti Reeve	SPECIAL PUBLICATIONS DIRECTOR	circulation eperior cannews.com
Steven Merritt	PRODUCTION DIRECTOR	ADVERTISING Susan Crane • 907.770.5592 scrane@petroleumnews.com

"It should be exciting to watch over the next few years," Houseknecht said, reflecting on the high level of new industry activity south of the traditional fairway of oilfield development. "I'm sure there will be prospects identified with the 3D that we really can't see in the 2D, and that should lead to some interesting wells."

A key new play and associated assessment unit is that of the Torok and Nanushuk formations, in the Brookian sequence, the youngest and shallowest of the North Slope petroleum bearing rock sequences. But the USGS fully evaluated this play, the focus of recent major oil discoveries, in its recent NPR-A assessment and will not, therefore, include the play as an assessment unit in its central North Slope evaluation. The Torok and Nanushuk extend eastward, to the east side of the Colville River. But east of that area the Brookian rocks, while extensive, are generally younger.

Producing area well understood

Houseknecht pointed out that the central North Slope contains most of the producing oil fields of the region. Hence, the petroleum potential along the northern part of the region is already well understood, other than a few offshore opportunities that warrant further evaluation. In particular the Ellesmerian sequence, the host rock sequence for fields such as Prudhoe Bay and Endicott, has been thoroughly explored in areas where the oil sources are in the pressure and temperature window appropriate for oil generation. However, there is gas potential in the Ellesmerian to the south, and in the fold belt to the north of the Brooks Range, Houseknecht commented.

Focus on the Brookian

Much industry interest is currently focused on the Brookian, which is found across much of the region and represents the largest block of underexplored geology with oil potential, Houseknecht said. The sequence includes the Seabee, Tuluvak, Canning and Sagavanirktok formations. This rock sequence was deposited in the same evolving marine basin system as the older Torok and Nanushuk, but in a significantly different geologic environment. In particular, the region became less tectonically active, leading to very thick potential oil source rocks but relatively sparse sand relative to the Nanushuk, Houseknecht said. On the other hand, there are rock formations such as the Schrader Bluff and Prince Creek with good potential oil and gas reservoirs. And, in a third, young and shallow "slug" of the Brookian, rejuvena-

tion of the emerging Brooks Range resulted in much sand of reservoir quality in the Sagavanirktok, Houseknecht said.

Regional variations

There is a contrast in the nature of the petroleum systems between the region to the west of the trans-Alaska pipeline and the region to the east. To the west the Brookian rocks typically dip to the south, causing oil to tend to migrate northward into traps associated with the Barrow Arch, a major structure that runs along the Beaufort Sea coastal region. To the east, the Brooks Range steps out farther north, causing the rock strata to dip more northward. That, in turn, raises uncertainty over trapping mechanism and the possible loss of oil resources to the surface, Houseknecht said.

Another key factor relates to the fact that in the northeastern sector of the central North Slope a major geologic discontinuity, the Lower Cretaceous Unconformity, has eroded out the older oil source rocks, especially the Shublik and the Kingak, that are key to the petroleum system to the west. There are thick and rich Brookian source rocks in the northeast, but the lack of the older sources introduces a risk factor into the petroleum potential.

Under explored block

Particularly intriguing is a 2,000-squaremile block east of the trans-Alaska pipeline where there has been significant recent industry interest and land leasing, but where relatively little is known about the subsurface. There have only been four wells drilled in the region, with the youngest of these wells drilled several decades ago.

"So there's a big block there about which we know very little, based on subsurface penetrations," Houseknecht said.

And such seismic that does exist for this region is 2D seismic, rather than the 3D seismic that is typically used to located the subtle stratigraphic oil traps characteristic of the Brookian. The result will presumably be high levels of uncertainty in the petroleum assessment for a region that has good oil potential — companies are in the process of collecting 3D seismic data in the region, but this proprietary data is not available to the USGS scientists, Houseknecht commented.

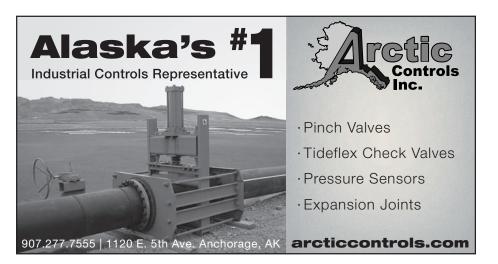
"It should be exciting to watch over the next few years," Houseknecht said, reflecting on the high level of new industry activity south of the traditional fairway of oilfield development. "I'm sure there will be prospects identified with the 3D that we really can't see in the 2D, and that should lead to some interesting wells."

Alan Bailey	CONTRIBUTING WRITER
Eric Lidji	CONTRIBUTING WRITER
Gary Park	CONTRIBUTING WRITER (CANADA)
Steve Sutherlin	CONTRIBUTING WRITER
Judy Patrick Photography	CONTRACT PHOTOGRAPHER
Forrest Crane	CONTRACT PHOTOGRAPHER
Renee Garbutt	CIRCULATION MANAGER

Petroleum News and its supplement. Petroleum Directory, are owned by Petroleum Newspapers of Alaska LLC. The newspaper is published weekly. Several of the individuals listed above work for independent companies that contract services to Petroleum Newspapers of Alaska IIC or are freelance writers

OWNER: Petroleum Newspapers of Alaska LLC (PNA) Petroleum News (ISSN 1544-3612) • Vol. 24, No. 48 • Week of December 1, 2019 Published weekly. Address: 5441 Old Seward, #3, Anchorage, AK 99518 (Please mail ALL correspondence to: P.O. Box 231647 Anchorage, AK 99523-1647) Subscription prices in U.S. — \$118.00 1 year, \$216.00 2 years Canada — \$206.00 1 year, \$375.00 2 years Overseas (sent air mail) — \$240.00 1 year, \$436.00 2 years "Periodicals postage paid at Anchorage, AK 99502-9986." POSTMASTER: Send address changes to Petroleum News, P.O. Box 231647 Anchorage, AK 99523-1647.

Contact Alan Bailey at abailey@petroleumnews.com



• EXPLORATION & PRODUCTION Accumulate's Charlie 1 ops plan approved

By KAY CASHMAN

Petroleum News

On Nov. 22, the state of Alaska's Division of Oil and Gas approved Accumulate Energy Alaska's Charlie No. 1 exploration well's lease plan of operations, which the company is scheduled to drill this winter

some 29 miles west of the Franklin Bluffs pad on the North Slope.

Accumulate is a local operating subsidiary of 88 Energy Ltd., a West Perthbased ASX and AIM listed firm. The **ERIK OPSTAD**



company's Alaska

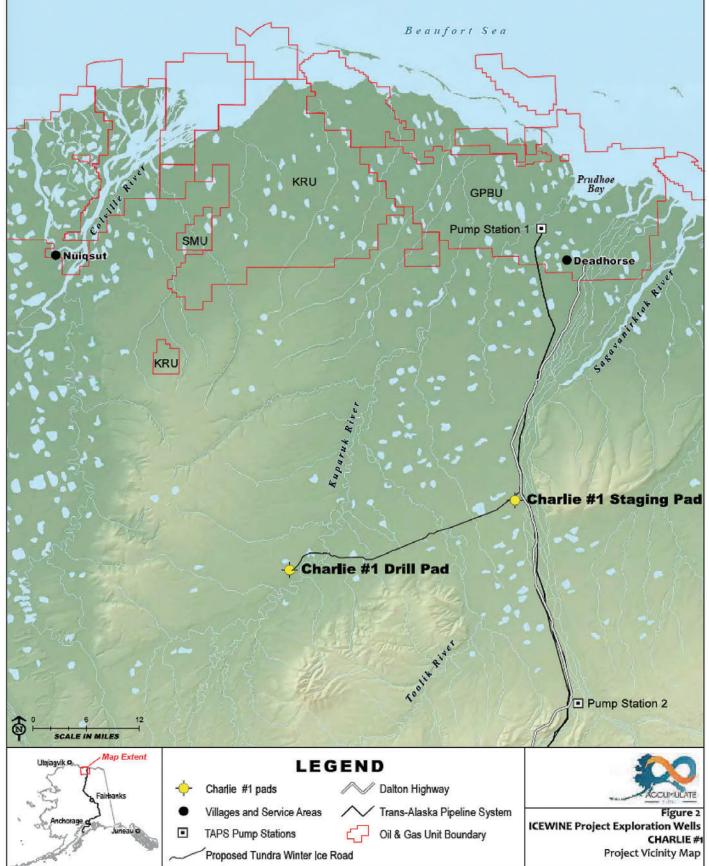
arm has three fully owned subsidiaries — Accumulate, Captivate Energy Alaska and Regenerate Energy Alaska.

88E's top executive in Alaska for Captivate and Accumulate is Anchoragebased general manager of operations Erik Opstad, a state of Alaska certified professional geologist, who has worked the North Slope for more than 34 years, including a stint with BP in various roles and as a principal and general manager of Savant Alaska.

On Aug. 8, Accumulate filed its proposed lease plan of operations for Charlie No. 1. After the division conducted an internal review that included consulting other agencies, a public notice of the plan and opportunity to comment was conducted from Oct. 1 to Oct. 31.

On Aug. 8, Accumulate filed its proposed lease plan of operations for Charlie No. 1. After the division conducted an internal review that included consulting other agencies, a public notice of the plan and opportunity to comment was conducted from Oct. 1 to Oct. 31.

Public notice of the plan and opportunity to comment, per AS 38.05.035, was published in privately owned general circulation newspapers on the North Slope and Anchorage. Additionally, a copy of the notice was posted on state of Alaska and division websites and faxes of the public notice were sent to the Nuiqsut, Deadhorse and Utqiagvik post offices.



No comments were received.

Scope of decision, operations

Accumulate will drill the Charlie No. 1 exploration well on state oil and gas lease ADL 393380, in which the mineral estate lessees are listed as Accumulate Energy Alaska and Burgundy Exploration.

Thirty-four miles of ice roads will be

built along with two ice pads, one drill pad and one staging pad.

All operations will be conducted from

INTEGRATED SOLUTIONS LOCALLY DELIVERED

As one of the world's largest engineering, procurement, fabrication, construction, and maintenance, companies, we bring clients greater capital efficiency with improved cost and schedule certainty. Since 1954, we have delivered some of the largest and most significant projects in the history of Alaska. www.fluor.com





FLUOR_®

© 2019 Fluor Corporation. All Rights Reserved Fluor is a registered service mark of Fluor Corporation ADH0183619

EXPLORATION & PRODUCTION

October production up 7% from September

Alaska North Slope crude, NGLs, average 508,751 bpd, up 33,103 bpd, mostly from Prudhoe; Cook Inlet averages 13,613 bpd, up 1%

By KRISTEN NELSON

Petroleum News

laska North Slope production averaged 508,751 barrels per day in October, up 7%, 33,103 bpd, from a September average of 475,648, but down 2.5% from an October 2018 average of 521,782 bpd.

ANS crude oil production averaged 461,170 bpd, up 5.8%, 25,292 bpd, from a September average of 435,878 bpd but down 2.2% from an October 2018 average of 471,753 bpd. ANS crude accounts for 90.7% of production, with 9.3% coming from natural gas liquids, which averaged 47,581 bpd in October, up 19.6%, 7,811 bpd, from a September average of 39,770 bpd, but down 4.9% from an October 2018 average of 50,031 bpd. Production from only three North Slope fields, Endicott, Northstar and Prudhoe Bay, includes NGLs.

Production data reported here is from the Alaska Oil and Gas Conservation Commission, which provides volumes by field and well on a month delay basis.

The largest month over month volume increase was from the Slope's largest field, BP Exploration (Alaska) operated Prudhoe Bay, which averaged 254,432 bpd (209,781 bpd of crude and 44,650 bpd of NGLs), up 31,520 bpd, 14.1%, from a September average of 222,911 bpd (185,163 bpd of crude and 37,749 bpd of NGLs) but down 5.3% from an October 2018 average of 268,623 bpd (221,607 bpd of crude and 47,016 bpd of NGLs).

In addition to the primary reservoir, production volumes from Prudhoe include Aurora, Borealis, Lisburne, Midnight Sun, Niakuk, Polaris, Point McIntyre, Put River, Raven and Schrader Bluff.

Other increases

The Hilcorp Alaska operated Endicott field had the largest month over month percentage increase, up 57.6%, 2,732 bpd, at 7,473 bpd, from a September average of 4,742 bpd, and also up 3.8% from an October 2018 average of 7,198 bpd. Hilcorp's most recent plan of development for Endicott, the Duck Island unit, listed facilities work in September, which likely accounted for the lower volumes in that month. Endicott crude production averaged 6,564 bpd in October, 87.8% of the field's production, and NGLs averaged 909 bpd, 12.2% of production.

The ConocoPhillips Alaska operated Colville River field averaged 58,189 bpd in October, up 7.2%, 3,918 bpd, from a September average of 54,271 bpd, but down 6.6% from an October 2018 average of 62,266 bpd.

In addition to oil from the main Alpine pool, Colville production includes satellite production from Fiord, Nanuq and Qannik.

ConocoPhillips's Greater Mooses Tooth in the

National Petroleum Reserve-Alaska, which came online in October 2018, averaged 7,481 bpd this October, up 2.3%, 165 bpd, from a September average of 7,316, but down 3.5% from an October 2018 average of 7,754 bpd. There are three wells in production at GMT, but one wells, GMTU MT6-05, accounted for 6,582 bpd in October, 88% of the field's production.

The Hilcorp Alaska operated Northstar field averaged 9,172 bpd in October, up 1.5%, 137 bpd, from a September average of 9,035 bpd but down 17.4% from an October 2018 average of 11,103 bpd. Crude oil production at Northstar averaged 7,150 bpd in October, 78% of the field's production, while NGLs averaged 2,022 bpd, 22% of production.

Down month over month

Production from other North Slope fields was down, month over month.

The largest per barrel drop was at the ConocoPhillips Alaska operated Kuparuk River field, the Slope's second largest, where production averaged 107,921 bpd in October, down 1.6%, 1,707 bpd, from a September average of 109,628, and down 2.5% from an October 2018 average of 110,648 bpd. In addition to the main Kuparuk pool, Kuparuk produces from satellites at Meltwater, Tabasco and Tarn, and from West Sak.

The Hilcorp Alaska operated Milne Point field averaged 29,571 bpd in October, down 5.2%, 1,622 bpd, from a September average of 31,192 bpd but up 40.2% from an October 2018 average of 21,099 bpd. Milne production dropped steeply in August, to 11,066 bpd from 26,768 bpd in July, but production in the plus-20,000 bpd range has been the norm at the field, where the biggest recent change was in April when Hilcorp brought the Moose Pad online, and production kicked up from the mid-20,000 bpd range to 25,000-plus, where with the exception of August volumes it has remained. August is part of the annual planned maintenance season on the North Slope, frequently accounting for temporary drops in production.

Eni's Oooguruk field averaged 8,276 bpd in October, down 11.8%, 1,103 bpd, from a September average of 9,379 and down 17.4% from an October 2018 average of 10,025 bpd.

Eni's Nikaitchuq field averaged 19,946 bpd in October, down 3.4%, 706 bpd, from a September average of 20,652 bpd, but up 24% from an October 2018 average of 16,091 bpd.

The ExxonMobil Production Co. operated Point Thomson field averaged 4,810 bpd in October, down 4.5%, 228 bpd, from a September average of 5,038 bpd and down 6.2% from an October 2018 average of 5,129 bpd.

Badami, operated by Savant Alaska, a Glacier Oil & Gas subsidiary, averaged 1,481 bpd in October, almost flat at a loss of 0.2%, 3 bpd, from a September average of 1,484 bpd, but down 19.8% from an October 2018 average of 1,846 bpd.

Cook Inlet

Cook Inlet production averaged 13,613 bpd in October, up 0.7%, 99 bpd, from a September average of 13,514 bpd, but down 8% from an October 2018 average of 14,802 bpd.

Hilcorp's Beaver Creek averaged 235 bpd, up 4.9%, 11 bpd, from a September average of 224 bpd, and up 231% from an October 2018 average of 71, following redrill work which the company did in November 2018.

Hilcorp's Granite Point averaged 2,403 bpd in October, up 5.8%, 132 bpd, from a September average of 2,271 but down 12.2% from an October 2018 average of 2,736 bpd.

BlueCrest's Hansen field, the Cosmopolitan project, averaged 1,246 bpd in October, down 1.2%, 15 bpd, from a September average of 1,261 but up 6% from an October 2018 average of 1,176 bpd.

Hilcorp's McArthur River averaged 4,472 bpd, up 3.5%, 151 bpd, from a September average of 4,321 bpd, but down 2% from an October 2018 average of 4,562 bpd.

Middle Ground Shoal, also a Hilcorp field, averaged 1,325 bpd in October, down 2.4%, 33 bpd, from a September average of 1,358 bpd and down 10.4% from an October 2018 average of 1,478 bpd.

Redoubt Shoal, operated by Cook Inlet Energy, a Glacier Oil & Gas subsidiary, averaged 1,132 bpd in October, down 21.1%, 303 bpd, from a September average of 1,435 bpd and down 15% from an October 2018 average of 1,331 bpd.

Hilcorp's Swanson River field averaged 841 bpd in October, up 0.4%, 3 bpd, from a September average of 838 bpd, but down 33.4% from an October 2018 average of 1,262 bpd.

Hilcorp's Trading Bay field averaged 1,435 bpd in October, up 10.7%, 139 bpd, from a September average of 1,296 bpd, and also up, by 1.9%, from an October 2018 average of 1,409 bpd.

The West McArthur River field, operated by Cook Inlet Energy, averaged 524 bpd in October, up 2.8%, 14 bpd, from a September average of 510 bpd but down by 32.6% from an October 2018 average of 777 bpd.

ANS crude oil production peaked in 1988 at 2.1 million bpd; Cook Inlet crude oil production peaked in 1970 at more than 227,000 bpd.

> Contact Kristen Nelson at knelson@petroleumnews.com





FOR MORE THAN 39 years

Experts in Resource Development and Heavy Civil Construction

Cruz Construction | Alaska Interstate Construction



On-site Remote and Offshore Health and Safety

Deploying highly trained, field-experienced physicians, physician assistants, registered nurses, paramedics, and health and safety advisors to operations anywhere in the world.

Services include medical audits. risk assessments, site assessments, on-site weather monitoring, and contingency planning for your project location.

> www.salamedics.com 907-331-8140

Sequence and schedule of events

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date 12/1/2019
1.	Conduct field studies, project planning and design, and project permitting	7/14/2019	
2.	Inspect/survey main TWR alignment, TWR spur alignment and ice pads, sound potential water sources, and install thermistors	9/1/2019	9/15/2019
3.	Pre-pack all TWR alignments and pad locations	11/15/2019	12/15/2019
4.	Construct main TWR, TWR spurs and ice pads	12/15/2019	1/1/2020
5.	Mobilize drill rig, camp and support operations	1/1/2020	1/21/2020
6.	Drill & test Charlie #1	1/14/2020	4/27/2020
7.	Demobilize drill rig, test equipment, camp and support operations	2/22/2020	4/27/2020
8.	Cleanup, remediate & rehabilitate TWR alignments and ice pad locations	7/14/2020	9/14/2020

continued from page 5 CHARLIE WELL

the ice pads.

Facilities used for the operation will include a satellite office camp, storage and laydown areas, a communication tower, maintenance shops and a 60-80 bed camp.

All facilities will be temporary.

The staging pad will be built one mile west of the Dalton Highway at Milepost 386.

The primary drilling objective is testing and evaluating the Seabee formation for oil, a target found in surrounding exploration wells, including Malguk No. 1, drilled by BP in 1991. However, the Charlie No. 1 will intersect seven stacked prospects, four of which are interpreted as oil bearing.

Using the Nordic 3 drilling rig, the Charlie well will be drilled to an approximate depth of 11,000 feet.

Electrical, natural gas, sewer and water utilities will not be on the ice pads. Rig operations will be self-contained, powered by generators. Smaller dual generator sets will provide power to camps, offices and other facilities.

Project road activities include the following:

• Constructing the 32-mile long main TWR (tundra winter road) starting at MP 386.7 Dalton Highway.

• Constructing a 300 by 300-foot ice staging pad within one mile of the start of the main TWR.

• Constructing the 500 by 500-foot

Charlie No. 1 ice drill pad.

Accumulate has identified two locations for potential ice airstrips and plans to build a single airstrip in one of the locations as needed. The airstrip may be used to transport crew members and materials required for the operation.

The company's preferred location is on Lake A28 with an alternate plan for Lake A23. Both lakes are within the MTRS U004N011E Sec 7.

The airstrip will be designed to accommodate up to a 30-passenger aircraft and may be up to 300 feet wide and 5,000 feet in length.

Per the division's approval decision, "an eligible person affected" by the decision may appeal it, in accordance with 11 AAC 02.

Any appeal must be received within 20 calendar days after the date of issuance of this decision (Nov. 22), as defined in 11 AAC 02.040(c) and (d), and may be mailed or delivered to the commissioner, Alaska Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 907-269-8918; or emailed to dnr.appeals@alaska.gov.

"An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court.

A copy of 11 AAC 02" may be obtained from any regional information DNR office.

> Contact Kay Cashman at publisher@petroleumnews.com

GOVERNMENT

BLM sets meeting schedule for NPR-A IAP

The federal Bureau of Land Management is seeking public input on the draft environmental impact statement for a new integrated activity plan for the National Petroleum Reserve-Alaska and has scheduled public meetings.

The public comment period for the Draft Integrated Activity Plan EIS began Nov. 22 and will end on Jan. 21.

BLM will hold eight public meetings during the public comment period.

• Point Lay, Dec. 10, 6:30-9 p.m., community center, with an open house at 6:30 and the presentation at 7.

• Anchorage, Dec. 11, 6-9 p.m. at the ZJ Loussac Library, with an open house at 6 and the presentation at 7.

• Wainwright, Dec. 12, 6:30-9 p.m. at the community center, with an open house at 6:30 and the presentation at 7.

• Utqiagvik, Dec. 16, 6:30-9 p.m. at the Inupiat Heritage Center with an open house at 6:30 and the presentation at 7.

• Atqasuk, Dec. 17, 6:30-9 p.m. at the community center with an open house at 6:30 and the presentation at 7.

• Fairbanks, Dec. 18, 6-9 p.m. at the Morris Thompson Center, with an open house at 6 and the presentation at 7.

• Nuiqsut, Jan. 7, 6:30 to 10 p.m. at the Kisik Community Center with an open house at 6:30 and the presentation at 7.

• Anaktuvuk Pass, Jan. 9, 6:30-9 p.m. at the community center with an open house at 6:30 and the presentation at 7.

—PETROLEUM NEWS

EXPLORATION & PRODUCTION

US rig count drop continues, down 3 to 803

Baker Hughes reports the number of rigs drilling for oil and natural gas in the U.S. continued to fall the week ending Nov. 22, down three to 803, following drops of 11, five, eight and 21 over the previous four weeks.

In its weekly rig count the Houston oilfield services company said the active rig count was down 276 from 1,079 active rigs a year ago.

The company reported that 671 rigs targeted oil (down three from the previous week; down 214 from a year ago) and 129 targeted natural gas (unchanged from the previous week; down 65 from a year ago). There were three miscellaneous rigs active (unchanged from the previous week and up by three from a year ago).

The company said 54 of the U.S. holes were directional, 699 were horizontal and 50 were vertical.

Louisiana was up two rigs from the previous week and Colorado was up by one. Rig counts in California, Ohio, Oklahoma, Utah, West Virginia and Wyoming were unchanged from the previous week.

New Mexico, North Dakota and Pennsylvania were each down by one rig from the previous week.

Texas, with the largest number of active rigs in the country at 406, was down by two from the previous week.

Alaska was down by three rigs.

Baker Hughes shows Alaska with five rigs active for the week ending Nov. 22, unchanged from a year ago.

The U.S. rig count peaked at 4,530 in 1981. It bottomed out in May 2016 at 404. -KRISTEN NELSON





 Commercial Diving Marine Construction Services

• Platform Installation, Maintenance and Repair • Pipeline Installation, Maintenance and Repair

Underwater Certified Welding

American Marine Services Group

6000 A Street, Anchorage, AK 99518



Deadhorse, AK

907-659-9010

www.amarinecorp.com • www.penco.org alaska@amarinecorp.com

Anchorage

Honolulu

NDT Services

- Salvage Operations
- Vessel Support and Operations



- Environmental Services
- Oil-Spill Response, Containment and Clean-Up
- Hazardous Wastes and Contaminated Site Clean-Up and Remediation
- Petroleum Vessel Services, e.g. Fuel Transfer
- Bulk Fuel Oil Facility and Storage Tank Maintenance, Management, and Operations

We know pipes

Inside and out.

At Flowline Alaska, we've spent decades helping to keep oil flowing on the North Slope.

It's a record we're proud of, and we look forward to a future where we can provide the service and support necessary to grow and expand Alaska's energy industry.

Because we want to keep Alaska's oil flowing, today and tomorrow.



Don't miss another issue! Subscribe to Petroleum News today: 907.522.9469

Los Angeles



EXTENDED-REACH

AT ~\$25/BBL WTI COS

~100 MMBOE ERD RESOURCE

DRILLING RIG

continued from page 1

ERD RIG

together like a big Lego to make seven rig modules," Paul McGrath, the ERD project director, was quoted as saying in July.

"COP Alaska has been working on the rig from initial FEED (front end engineering design) studies and concept stage for about four years. During construction we had assistance from our colleagues in ... ConocoPhillips Canada. The team recognizes what a game changer this will be for ConocoPhillips in Alaska," McGrath said.

The 9.5 million pound Doyon 26 ERD rig — weight equivalent to almost 10 fully loaded Boeing 747s and 1.5 to 2 times more powerful than other North Slope rigs — is expected to increase oil production by accessing previously unreachable resources without expanding the surface footprint.

Next, in March it will be shipped to CD2 pad, enabling the development of Fiord West, an oil field discovered by ConocoPhillips in 1996 northwest of the main Alpine field, west of the central North Slope. Fiord West is in the Colville River unit.

Scott Jepsen, vice president external affairs and transportation ConocoPhillips Alaska, said in July that Fiord West development was problematic because the area is along the coast in wetlands. The CD2 pad has been extended to 12 acres with a little more gravel to accommodate the ERD rig and development.

Other drilling rigs do not have the capability to access Fiord West without building a new gravel pad, additional pipelines and more roads — hence increasing the development footprint in an environmentally sensitive area. Doyon 26 does.

Extended reach technology enables the more powerful rig to drill targets some 7 miles from the surface location, whereas other rigs are designed to drill about 22,000 feet from a pad. This means from the CD2 pad the high-tech ERD rig will be able to develop 154 square miles of reservoir versus the standard 55 square miles.

New drilling records ahead

At ConocoPhillips' Nov. 19 analyst and investor meeting in Houston, Michael Hatfield, president, Alaska, Canada and Europe, took what he described as a deeper look the company's drilling in Alaska,



which he said has been "one of the key enablers" of the company's performance and success in the state.

Alaska – Increasing Recovery and Reducing Footprint

2019

(ERD)

2020

2020

Narwhal Appraisal

BREAKING DRILLING-LENGTH RECORDS EVERY YEAR

2018

EXTENDING BOUNDARIES TO TEST NARWHAL PROSPECT FROM EXISTING PAD

CD4 Pad

us ~5,000 ft. vs. 2016 drilling radius ~22,000 ft. vs. future ERD radius ~37,000 f

TOP-10 LONGEST ALASKAN WELLS WERE DRILLED FROM CD5

2017

CONTINUED DRILLING EXCELLENCE

40,000

30,000

20,000

10,000

2016

TOTAL LENGTH

"We have an exceptional track record in the last few years of drilling challenging wells to deliver resources that would be inaccessible by traditional methods. At CD5 in the Western North Slope, we drilled the 10 longest wells in Alaska you can see several of the records on this graph (see in pdf and print versions of this article).

"The longest well is over 32,000 feet, the longest lateral ever drilled in North America is nearly 22,000 feet and we were able to reach our normal appraisal targets from an existing pad at a relatively shallow depth of a high sale angle of 83 degrees in a horizontal distance of over three miles," he said, noting the new Doyon 26 rig will set even greater records.

The ERD rig combines the latest drilling technologies, including "manage pressure drilling and the latest in rig automation. It incorporates a reflective drilling system that can automate repetitive tasks and improve performance significantly. These technologies will enable us to manage the challenges of drilling even longer and more complex wells to access additional resources," Hatfield said.

Over the next 10 years, "we expect the ERD rig will access 100 million barrels at a constant supply of \$25 a barrel. Our track record of execution has allowed us to economically develop these areas and will be key to continuing to unlock value in Alaska," he said.

Six wells in 2020



Four forklift man baskets supporting work on one ERD rig module in Deadhorse.



WE OFFER THE FOLLOWING SOLUTIONS TO PUBLIC AND PRIVATE SECTORS

- Custom Web, Desktop, & Mobile apps
 - IT Business Analysis
- Database Design & Modeling
- Microsoft Server Maintenance
 - SQL Server Database
 Administration
- Oil & Gas Risk Assessment and Regulatory Compliance Tools
 - Revenue Taxation
 - Hospitality Systems

Ph| 907-644-4522 Fx| 907-644-4523 services@Computing-ALT.com www.Computing-ALT.com 5701 Silverado Way, Ste. I Anchorage, AK 99518 The six wells at Fiord West will be drilled into the 12,015-acre Fiord West Kuparuk participating area, which was approved May 30. The PA is jointly managed by the state of Alaska, Arctic Slope Regional Corp. and the U.S. Bureau of Land Management and includes state and joint state-ASRC and BLM leases.

The Fiord West Kuparuk PA is about a mile west of the Fiord Nechelik PA — an area with seven exploration wells, six of which encountered the Lower Cretaceous Kuparuk River formation.

Using a standard rig, ConocoPhillips drilled one well in the new Fiord West Kuparuk PA with production from that well already online.

Two ConocoPhillips biz units

A drill rig often needs to be moved hundreds of miles in a single winter exploration and appraisal off-road season and not all rigs are self-propelled, making

The Doyon 23 ERD rig derrick and one module in Deadhorse.

mobility a key factor for the North Slope.

"We asked Doyon to make this large rig as mobile as typical North Slope rigs," Chip Alvord, drilling manager in Alaska, said in July. "That's quite a challenge given the size of the rig, but Doyon's design met that challenge." The rig moves as fast as the other rigs and it's also selfpropelled. "The rig's mobility will allow it to get online and drill a well more quickly," he said.

"There are no facilities for constructing drilling rigs in Alaska, so most Arctic rigs are built in Washington state on the U.S. West Coast or in the Edmonton area," McGrath said. Doyon subcontracted with NOV, a Nisku company recognized as a foremost designer and fabricator of Arctic drilling rigs.

For two years, on two-week rotations, two rig supervisors from ConocoPhillips

Alaska joined the team in Canada.

"For CPC (ConocoPhillips Canada) throughout the construction of the rig, the business unit has had the opportunity to learn from COP Alaska and vice versa," an article published on Doyon Drilling's website said.

On April 23, representatives from both business units met in Nisku to take a final look at the completed ERD rig, which internally is referred to as "the beast" (see slide in pdf and print versions of this story).

The anticipated "first drill" date for the new rig is April 2020, Doyon said, noting the new ERD rig would generate 100 direct jobs and "hundreds of indirect positions" to support rig operations. ●

Contact Kay Cashman at publisher@petroleumnews.com

continued from page 1 OCEAN MAPPING

coordinate EEZ mapping strategy development. The director and chairman serve as co-chairs of the Ocean Policy Committee, established by executive order June 19, 2018.

"This is an important step for Alaska, especially for the Arctic as we are woefully behind in developing upto-date maps for the region," said U.S. Sen. Lisa Murkowski, R-Alaska. "The Arctic is crucial to our nation's geopolitical, economic, and environmental wellbeing.

"Our waters are home to an abundant variety of untapped natural resources that can be used for food, medicine, and energy," she said.

Murkowski said she has supported funding for NOAA hydrographic surveys for charting in the Arctic, which the memorandum will augment.

"Only a small part of the Arctic has been charted to modern standards, hindering the safety of maritime operations in the region," she said. "Mapping the waters around our state will provide valuable information on critical minerals and coastal resources while supporting safer shipping in the Arctic."

"Ensuring our oceans are thoroughly mapped is one of the most important things we can do to protect our economy and the maritime careers that depend on safe,

navigable waters," said Congressman Don Young, R-Alaska.

"As the Arctic's significance to our global economy continues to grow, a better understanding of our oceans will be crucial."

"As Alaskans, we depend on our oceans to provide for our families and drive our economy," said U.S. Sen. Dan Sullivan, R-Alaska. "The provisions outlined in this order will serve to bolster our understanding of our oceans and coastlines, and I commend the president for prioritizing this issue."

"Completed mapping is especially lacking for Alaska and for the Alaskan Arctic, which lack the comprehensive shoreline and nearshore maps available for much of the rest of the Nation," the memorandum said. "Maps and charts that present accurate and contemporary coastal elevation data support economic growth, resource management, and the safety and security of coastal residents."

EEZ only 40% mapped

The U.S. EEZ is among the largest in the world, larger than the combined land area of all 50 states.

The memorandum said the EEZ contains underutilized or undiscovered natural resources, including critical minerals, marine-derived pharmaceuticals, energy and areas of significant ecological and conservation value, but just 40% has been mapped. Significantly less of the area has natural resources and ocean systems that have been characterized, including identification and evaluation, by executive departments and agencies.

Trump's memorandum was roundly praised by agencies involved with and affected by its provisions.

"The knowledge gained from mapping and exploring the U.S. Exclusive Economic Zone will inform policies and guide actions to promote conservation, management, and balanced use of our ocean," said Council on Environmental Quality Chairman Mary B. Neumayr.

"A bold new era of ocean exploration is made possible through President Trump's actions," said Dr. Kelvin Droegemeier, director of the Office of Science and Technology Policy.

"Today's action will improve our understanding of the rich ecological and economic resources off our shores and reduce our reliance on foreign sources for important resources," said Joe Grogan, assistant to the president and director of the Domestic Policy Council.

"Mapping U.S. Exclusive Economic Zone and nearshore waters represents a tremendous step towards realizing the full scientific and commercial potential of our oceans and coastlines, and is essential for harnessing American offshore energy resources," said Department of Energy Under Secretary of Energy Mark W. Menezes. "Not only is more data about our ocean key to responsible offshore energy development, but reliable energy

see OCEAN MAPPING page 10

UAF leads project to map hydrocarbon seeps on seafloor

The University of Alaska Fairbanks said Nov. 21 that researchers from the university are mapping oil and gas seeps off Alaska's coast to better understand hydrocarbon resources and seafloor ecosystems. The work is being funded by the U.S. Bureau of Ocean Energy Management.

At hydrocarbon seeps, fluids leaking from the Earth's surface carry hydrocarbon gases, primarily methane but also ethane and propane. The fluids, which sometimes include crude oil, may ooze out slowly or bubble vigorously into the ocean. On land, seep locations have traditionally been used in prospecting for petroleum deposits. In the ocean, they can also be used to help assess oil and gas resource potential, and their chemistry can provide an environmental baseline to distinguish natural environmental conditions from oil spills.

UAF oceanographer Jennifer Reynolds is leading the project in collaboration with Fugro, a geo-data specialist company with decades of experience in Alaska and a global expert in seeps

Oil Patch Bits

mapping. Fugro's participation on the project is being led by geologist Kelley Brumley, a UAF alumna and seeps expert. Brumley and Reynolds are using the geology of the region to identify likely areas of additional seeps. They hope to check their predictions in future fieldwork at sea.

To map seep locations in the continental shelf off Alaska's coast, the team is reviewing a century's worth of reports, publications and data. Source information extends from the first days of Alaska oil and gas exploration a century ago through modern charting and fisheries surveys in Alaska waters.

"Every seep is important," said Reynolds. "We'll put all of them on the map and rate how confident we are about the accuracy of each location."

"Fugro is thrilled to partner with UAF on this project. We share a long record of collaboration with the university on both public and private-sector projects," Brumley said. She also noted that mapping natural seeps allows industry to focus their oil and gas exploration activities on the most promising areas, thereby reducing the need for large-scale 3D seismic programs. For more information visit https://news.uaf.edu.

Companies involved in Alaska's oil and gas industry

ADVERTISER

PAGE AD APPEARS ADVERTISER

PAGE AD APPEARS ADVERTISER

PAGE AD APPEARS

A ABR Inc. Acuren AES Electric Supply, Inc Afognak Leasing LLC Airgas, an Air Liquide company AK Lofts Alaska Dreams Alaska Dreams Alaska Frac Consulting LLC Alaska Frontier Constructors (AFC) Alaska Marine Lines Alaska Materials Alaska Railroad Alaska Rubber & Rigging Supply Inc. Alaska Steel Co.	CONAM Construction	Nalco Champion NANA WorleyParsons Nature Conservancy, The NEI Fluid Technology Nordic Calista North Slope Telecom Northern Air Cargo Northern Solutions NRC Alaska Oil Search Pacific Power Group PND Engineers, Inc. PENCO
Alaska Tent & Tarp Alaska Textiles Alaska West Express American Marine Arctic Controls ARCTOS Alaska, Division of NORTECH Armstrong AT&T Avalon Development	GMW Fire Protection Greer Tank & Welding Guess & Rudd, PC HDR Engineering, Inc. ICE Services, Inc. Inspirations	Q-Z Raven Alaska – Jon Adler Resource Development Council SALA Remote Medics

B-F

Bombay Deluxe BrandSafway Services Brooks Range Supply Calista Corp. Carlile **Chosen Construction** Colville Inc.

Lynden Air Cargo Lynden Air Freight Lynden Inc. Lynden International Lynden Logistics Lynden Transport Maritime Helicopters2

N-P

Nabors Alaska Drilling

Raven Alaska – Jon Adler
Resource Development Council
SALA Remote Medics6
Security Aviation
Soloy Helicopters
Sourdough Express
Strategic Action Associates
Summit ESP, A Halliburton Service
Tanks-A-Lot
The Local Pages
TOTE – Totem Ocean Trailer Express
Weona Corp.
Weston Solutions
Wolfpack Land Co.

All of the companies listed above advertise on a regular basis with Petroleum News

continued from page 9 OCEAN MAPPING

technologies are also needed to power the very instruments that collect this data."

"In addition to the numerous economic, national security, and environmental benefits that come from a better understanding of our natural resources, exploring the mysteries of the sea can also inspire the next generation of scientists in the fields of physics, biology, geology, chemistry, math and engineering," said retired Navy Rear Adm. Tim Gallaudet, assistant secretary of commerce for oceans and atmosphere and deputy administrator of NOAA.

Continuing policy of ocean knowledge

The memorandum states that it is the policy of the United States "to act boldly to safeguard our future prosperity, health, and national security through ocean mapping, exploration, and characterization."

"Data and information about the ocean help to advance maritime commerce, domestic seafood production, healthy and sustainable fisheries, coastal resilience, energy production, tourism and recreation, Trump is directing the OPC to recommend actions to increase the efficiency of the permitting process for ocean exploration activities across federal agencies.

environmental protection, national and homeland security, and other interests," it said, adding that these activities contribute more than \$300 billion per year of economic activity, 3 million jobs and \$129 billion in wages.

President Ronald Reagan issued Proclamation 5030: Exclusive Economic Zone of the United States of America, on March 10, 1983, noting that the United States has more than 13,000 miles of coastline and 3.4 million square nautical miles of ocean within its territorial jurisdiction.

Trump's memorandum notes that furthering the understanding of the resources in the U.S. EEZ "is important to conservation, management, and balanced use of our Nation's oceans."

Streamlining permitting

Through the memorandum, the president is pro-

moting efficient permitting for ocean exploration, mapping, and research activities. These activities frequently require multiple environmental reviews, consultations, permits and other authorizations under federal laws and regulations that protect resources such as maritime heritage sites and sensitive or protected marine natural resources.

Trump is directing the OPC to recommend actions to increase the efficiency of the permitting process for ocean exploration activities across federal agencies.

To ensure that these activities produce the broadest possible benefits and provide the greatest return on investment of federal resources, it is the policy of the United States to support these activities, when appropriate, in collaboration with non-U.S. government entities, the memorandum said.

The strategies, including those for the mapping of Alaska and Arctic waters, are to be developed within 180 days of the memorandum date, and submitted to the director and the chairman to inform actions of the OPC and relevant agencies. \bullet

Contact Steve Sutherlin at ssutherlin@petroleumnews.com

continued from page 1 CABINET OVERHAUL

Freeland) who is charged with handling intergovernmental relations.

One of Freeland's primary jobs is to patch over national divisions that have left Trudeau's Liberals without representation from the volatile oil producing provinces of Alberta and Saskatchewan.

Provincial issues

At this stage, however, Trudeau has given no indication how he plans to calm his two most vocal critics — the premiers of Alberta (Jason Kenney) and Saskatchewan (Scott Moe) — who feel they have been shunted aside as a leftleaning cabinet has given greater priority to imposing a carbon tax and tightening regulations that put a chokehold on plans to grow oil production.

But he could make a bold start to quiet Kenney and Moe by taking action to get construction moving ahead on the Trans Mountain pipeline expansion, TMX, and amending some of the more controversial elements of Bill C-48 which bans oil tankers from Pacific waters in northern British Columbia and Bill C-69, which overhauls environmental reviews of major resource projects — both bills that that are seen as driving away investors.

Without action on those fronts, the danger for Trudeau is that his second term will be overwhelmed by the issue of national unity that could see pressure in Alberta and Saskatchewan to hold referendums on having those two provinces separate from the Canadian federation.

The only hint he has offered since his reelection on Oct. 21 occurred in a meeting with Calgary Mayor Naheed Nenshi on November 20 when Trudeau said he was "interested" improving Bill C-69.

TMX confusion

The confusion surrounding TMX has become even more muddled with a disclosure that the Canadian and Alberta governments provided C\$320 million in direct and indirect subsidies through the Canada Development Investment Corp, a government corporation designed to support Canada's economic development that includes Trans Mountain among its subsidiaries.

That is accompanied by a partial resumption of preliminary work on TMX, even though the Federal Court of Appeal is set to start its second hearing on TMX before Christmas.

The court has left no doubt it will not be rushed into ruling whether the Canadian government has acted in good faith in meeting its duty to consult with First Nations affected by TMX and meet the concerns of indigenous communities.

Maxime Faille, an attorney for the Tsleil-Waututh First Nation, said the court has delivered a "clear message that cutting corners is not on and that frequent meetings are "not nearly enough without some meat on the bones of the process."

If the court takes as long to render a decision as it did the first time around — almost a year — it is likely to be late 2022

before the court phase is completed, shattering hopes of shipping 590,000 barrels per day of oil sands bitumen to Asia.

First Nations action

The only mildly encouraging development for the industry is that two of the eight First Nations involved in the federal appeal court proceedings have withdrawn their opposition to TMX, saying their concerns over the pipeline route have been resolved.

But the hopes stemming from that development were just as quickly dashed when the Tsleil-Waututh and three environmental groups said they will seek permission to present their concerns to the Supreme Court of Canada, having failed to gain a hearing before the federal court.

While the legal matters preoccupy both sides there is strong interest in the prospect of First Nations acquiring a stake in TMX from the Canadian government, which is the outright owner of the pipeline.

Mark Little, chief executive officer of oil sands giant Suncor Energy, urged the government to ensure that if the time comes to sell TMX back to the private sector that should include First Nations ownership.

He also challenged the energy sector and other Canadian industries to build new aboriginal partnerships across Canada.

Little said Suncor's C\$503 million sale of a 49% stake in an oil sands tank farm to two First Nations in 2017 created a model "which we think can be used in so many other opportunities."

Delbert Wapas, former chief of Saskatchewan's Thunderchild First Nation, said an equity position in TMX would give indigenous communities an economic opportunity and allow them to "get away from managing poverty to managing wealth."

Pipeline capacity

While its plate is full with TMX matters, the Trudeau government is also coming under heat from the Canadian Energy Pipeline Association, which said the industry will need more than pipeline capacity currently under development to meet even its most modest growth forecasts.

CEPA President Chris Bloomer told a membership meeting that "the debate is still very hot around the need to have more pipelines" as opponents step up their efforts to block TMX, plus the 830,000 bpd Keystone XL and 300,000 bpd Line 3 replacement by Enbridge.

But the combined capacity of 1.72 million bpd from those three projects falls far short of predictions by the Canadian Energy Regulator, which estimates Canadian oil production will climb by 2.3 million bpd over the next 20 years.

That outlook will keep the Trudeau government fully occupied far beyond its TMX challenge.

-GARY PARK

Contact Gary Park through publisher@petroleumnews.com

INSPIRATIONS

We offer personalized service, catering to the busy professional.

11am — 7pm (Late night appointments by pre-arrangement only)
Each stylist has a separate, enclosed work area for your privacy and comfort

700 W Northern Lights Blvd., Anchorage, Alaska 99503
Call for appointments • 229-6000

Mention this ad and receive a 10% discount on hair services!

continued from page 1 NPR-A PLAN

increased knowledge of the area, it was prudent to develop a new plan that provides greater economic development of our resources while still providing protections for important resources and subsistence access," BLM Alaska State Director Chad Padgett said in a statement.

The agency noted that in addition to advances in technology, a 2017 survey by the U.S. Geological Survey calculating a significantly higher estimate of technically recoverable oil required a new NPR-A management strategy. BLM said new information from caribou monitoring reports not available in 2012 also informed the new analysis.

Delegation supportive

There was swift reaction from Alaska's congressional delegation — in support of an updated plan — and the environmental community, in support of the existing plan, put in place in 2013 under the administration of President Barack Obama.

"This is a significant step toward a new plan that is more consistent with the legal purposes of the petroleum reserve, which holds the potential for billions of barrels of recoverable oil that can help refill the Trans-Alaska Pipeline," said U.S. Sen. Lisa Murkowski, R-Alaska. "We have recently learned a great deal about the abundant resources of the NPR-A, and updating the deeply flawed 2013 IAP to provide greater access is necessary to reflect our opportunities for responsible development," she said.

"The previous administration was dead set on locking up the NPR-A, which, in turn, stunted our economy," said U.S. Sen. Dan Sullivan, R-Alaska. "The Department of Interior's efforts to provide a new activity plan furthers our goal of responsible exploration and development, ensuring that Alaska's resources help the U.S. remain an energy superpower," he said.

"The resources available in the NPR-A are vast, and very frankly, the Obama Administration's 2013 IAP was an overlyrestrictive disaster for Alaskans who know our lands can be responsibly developed," said Congressman Don Young, R-Alaska.

The delegation said the 2013 IAP withdrew roughly half of NPR-A from energy development and also noted the 2017 estimate by the USGS that NPR-A contains an estimated 8.7 billion barrels of undiscovered, technically recoverable oil.

Enviros opposed

A joint statement by the Alaska Wilderness League, Audubon Alaska, Center for Biological Diversity, Defenders of Wildlife, Earthjustice, Northern Alaska Environmental Center, Conservation Lands Foundation, The Wilderness Society, Sierra Club, Native Movement and Fairbanks Climate Action Coalition took an opposite view of NPR-A and the proposed changes.

"BLM's proposal would potentially open some of our nation's most vital natural places to oil and gas exploitation: millions of acres of wilderness-quality lands with critical habitat for migratory birds, brown bears, caribou, threatened polar bears, walrus, whales and more," the groups said.

Pat Pourchot, who served as special assistant to the Secretary of the Interior for Alaska Affairs under the Obama administration, and is a current member of the Alaska Wilderness League board, said: "Noteworthy is the Teshekpuk Lake Special Area which protects the calving grounds, migration routes and insect relief areas of the Teshekpuk caribou herd, from which local residents harvest between three and five thousand animals annually." That special area, he said, also "contains internationally important waterfowl nesting, migration and molting areas" and would be opened to oil and gas leasing under Alternatives C and D of the proposed revision.

Leasing alternatives

Four alternatives are included.

Alternative A is the status quo, with 11.8 million acres for development under the 2013 record of decision.

That alternative is the "no action alternative" and would continue management of the area as approved under the 2013 record of decision. That alternative makes some 52% of NPR-A subsurface available for oil and gas leasing but does not recommend any rivers for addition to the Wild and Scenic Rivers system.

Alternative B decreases land available for leasing and new infrastructure to 11.4 million acres and designates all special areas as unavailable.

Under Alternative B, land set aside for conservation is increased, but the alternative does allow access for transporting oil from state offshore leases to the trans-Alaska oil pipeline. Under this alternative 50% of NPR-A would be available for oil and gas leasing.

"In the Teshekpuk Lake Special Area, there would be two north-south pipeline corridors provided to allow for linear rights-of-way to transport oil and gas from offshore leases through areas otherwise closed to new infrastructure," the plan says. Under this alternative, the 12 suitable rivers would be recommended for designation in the Wild and Scenic Rivers System.

Alternative C increases land for leasing and new infrastructure to 17.1 million acres, keeping a core area round Teshekpuk Lake as unavailable.

Under Alternative C, 75% of NPR-A subsurface would be available for leasing — "accomplished by reducing the areas

closed to leasing in the Teshekpuk Lake Special Area and within the Utukok River Uplands Special Area."

One north-south pipeline corridor east of Teshekpuk Lake would be provided for pipeline right of way. No rivers would be recommended for addition to the Wild and Scenic Rivers System.

Alternative D increases land available for leasing and new infrastructure to 18.3 million acres, opening the entire Teshekpuk Lake special area and parts of the Utukok River Uplands special area. Under this alternative 81% of NPR-A would be available for leasing, including all of the Teshekpuk Lake Special Area although surface occupancy would be limited and there would be timing limitations. No pipeline corridors would be needed; no rivers would be recommended for addition to the Wild and Scenic Rivers System.

BLM said that under all alternatives, there would be "a potential community road connecting Nuiqsut and Utqiagvik that is routed north of Teshekpuk Lake."

"All alternatives allow for applications to construct permanent onshore oil and gas infrastructure to support lease development in both the NPR-A and adjacent areas. This includes infrastructure, such as pipelines, necessary for owners of offshore state and federal leases to bring oil and gas across NPR-A to the Trans-Alaska Pipeline System."

BLM said that in addition to the range of leasing options, the revised IAP includes an examination of the current special area boundaries, considerations of new or revised lease stipulations and required operating procedures.

Public comment closes Jan. 21, 2020. BLM said the final IAP/EIS is scheduled to be released in 2020. \bullet

Contact Kristen Nelson at knelson@petroleumnews.com

A BIG thanks to all the sponsors below that made the 2019 SPE Scholarship Fundraiser a huge Success!



Bronze and other supporters

Read Cased Hole Alaska Railroad Corporation CONAM Kenai Fjords Tours Lynden Transport Moose's Tooth Barney's Sport Chalet Cynosure Brewing Carlile Nordic Calista Studio One Pilates Price-Gregory 49th State Brewery Major Marine Tours Arctic Lift Systems Advanced Body Solutions Northern Solutions Paul and Beverly Luedke-Chan Jitters Coffee House Petro Marine Baker Hughes Sheraton Hotel Great Harvest Bread Odd Man Rush Brewery Hotel 360 Seward Bagoy's Floral Sabrina Mangin Photography

continued from page 1 PASSING THE TORCH

pany we are today without Alaska. Thank you, Alaska, you made us far better and you made our lives far richer."

Weiss said Prudhoe Bay would be in good hands with Hilcorp.

"You've heard me talk the past couple of years about 40 more," she said.

"Hilcorp is an expert in mature fields; it's what they do; they're fantastic at adding decades to mature fields; they unleash the ideas of their people and bring creativity to the fore," she said. "They've got a proven track record, so we deeply believe that they're going to be very successful as operators."

"Prudhoe Bay is a very special place; it's an iconic field; it's one of the great fields across the planet," she said. "It's produced 13 billion barrels in the state, and with Hilcorp at the reins, I believe there is far more than 2 billion left to go and far more than 40 more."

A word from Hilcorp

David Wilkins, senior vice president of Hilcorp Alaska, joined Weiss at the podium.

Wilkins said Weiss is a phenomenal leader.

"She leads not from Harvard MBA

technical; she leads from inside the soul; she leads with passion, conviction," he said. "There is nobody that is better focused for BP, a better spokesman for this industry, a better spokesman for this state. ..."

"I also want to thank Janet for their dedicated team," he said. "I'm learning that passion — the innovation, the grit of BP employees — over the past month."

"I'm excited about the opportunities to lead these great people into the next generation of Prudhoe Bay," Wilkins said. "What will that look like? Honestly, today I can't tell you, because we're still in the seek to understand mode."

"We're still talking to BP employees ... 'what would you do?" he said. "We're still talking to our great partners of ExxonMobil and Conoco, seeking to understand what we need to do. We're still talking to the state and governmental officials, 'what do we need to do?"

"But I do know, like Janet said, Prudhoe Bay is world class, and in my 30 plus years of experience ... I've never seen a field like it; I haven't seen anything built like it on the planet."

"I'm looking forward to the great opportunity in the future," Wilkins said.

—STEVE SUTHERLIN

Contact Steve Sutherlin at ssutherlin@petroleumnews.com



Janet Weiss and David Wilkins

continued from page 1 LNG ACTION

But Equiterre, a non-profit, non-government organization, is opposed to a plan it says would put Canada "even further behind its efforts" to meet its Paris commitment to reduce greenhouse gas emissions, adding the facility would require 160 tankers to use the liquefaction facility every year.

The Gazodug proponents counter that they intend to be compatible with "provincial, Canadian and international energy and climate policies (and would) facilitate an energy transition."

BC project

Cedar LNG, led by the Haisla First

The surprising development was an announcement that Alberta and British Columbia have sent officials to Japan and South Korea to make a case for selling Western Canadian gas in that region.

Nation, is designed to ship LNG from a floating dock near Kitimat, B.C., close to the C\$39 billion LNG Canada project.

However, opponents argue the facility has the "potential to cause adverse effects to marine and freshwater fish."

No timetable has been set for either application to go before an environmental panel.

Separately, Rockies LNG Partners is weighing the use of floating barges off

the northern B.C. coast, with Chief Executive Officer Greg Kist estimating that would be cheaper than building an onshore facility and have a smaller environmental footprint.

The partnership hopes to identify a potential site in the first quarter of 2020 and start service in 2026, following the planned C\$30 billion Shell-led LNG Canada project on the Pacific coast.

Rockies LNG now has nine partner companies and is hoping to add more after discussions with "a handful of very large LNG players and LNG buyers," Kist said, adding his principals are "very open" top aboriginal communities acquiring a stake in the project.

Sales trip to Japan

The surprising development was an

Columbia have sent officials to Japan and South Korea to make a case for selling Western Canadian gas in that region. Alberta's minister for natural gas, Dale Nally, acknowledging that the two

announcement that Alberta and British

Dale Nally, acknowledging that the two provinces are often at extreme odds on energy matters, said "no hard sell was required, no-arm twisting was needed ... we are aligned on this."

He said there is one obvious benefit to establishing shipping terminals at Kitimat and at the Jordan Cove project at Coos Bay, Oregon, which are eight to 10 days closer to Asian markets than tankers sailing from Texas or Louisiana. —GARY PARK

> Contact Gary Park through publisher@petroleumnews.com

continued from page 1

STATE ECONOMY

year. It's a pretty modest change, he said, with not a lot of difference in overall economic activity, but movement is in the right direction.

"Economies do not operate on a calendar year," Fried said. "They're much more organic than that. ... I wouldn't have said this last year, but the forces that are already in play in our economy will be largely the forces operating in 2020." Preliminary numbers for 2019 show an increase in some 1,800 jobs, according to a slide illustrating the talk. By comparison, the 0.5% drop in 2018 represents some 1,200 jobs. There's a better story in total wages, Fried said, with payroll for 2018 at some \$18 billion, up 2.9%, and a payroll growth of 4% indicated by preliminary figures for 2019. Payroll began to recover before employment, he said, because some of the higher wage industries, like oil and gas, construction, business and professional services, were in that 2018 recovery so more money began to pour into the economy and probably helped lead the recovery.

Unemployment rate

Alaska's unemployment, at 6.2%, is the highest rate in the U.S., which is not unusual, Fried said.

But it's the lowest rate the state has had since the early 1970s when consistent statistics started to be kept.

And the 3.6% U.S. unemployment rate is the lowest in 50 years, putting Alaska's

and 2017 and beginning to recover in 2018.

There aren't a lot of new homes being built in Alaska, Fried said, with last year one of the lowest since the early 1990s and 2020 not expected to be much different. New housing stood at 4,156 units in 2006, dropping to 3,249 in 2007, then hovering mostly in the 2,000s and dropoutmigration since 2012-13, the longest period of outmigration in the state's history, Fried said. In 2011-12, net migration was minus 1,864. In the most recent data, for 2017-18, net migration was minus 7,577.

A lot of people move in and out of the state each year, Fried said, and with the economy in the Lower 48 booming, people won't come up here in high numbers. Alaska is in the lowest period of inflation in out history, he said, and because of housing, 2019 might come in negative, deflationary. Slide data show inflation for Anchorage and urban Alaska at 1.8% in 2010, topping out at 3.2% in 2011, dropping to under 1% for 2015-2017, rising to 3% in 2018 and likely to be a minus 0.3% for 2019.

numbers in check, he said with many having a difficult time recruiting workers even with slow economic growth.

Nonresident hire has been falling for the last two or three years, Fried said, with nonresident wages topping out at 16.1% in 2015 and falling in both 2016 and 2017.

Sector employment

Alaska oil industry employment began to recover in 2018, Fried said, recovery which is continuing in 2019, but with a long way to go from highs in early 2015. The accompanying slide shows peaks at more than 15,000 in the industry, dropping to below 10,000 in 2017 and just now edging back up to the 10,000 mark.

Construction shows the largest increase in employment numbers, Fried said, but because that industry peaked in the early 2000s it has a long way to go. A slide reflecting 2015-19 numbers shows construction employment dropping in 2016 ping to 1,659 last year.

Residential vacancy rates are trending upward, from 4.4% in 2011 to 7.9% in 2018 and 8.6% in 2019, and home prices have changed little.

Fried said that as a result of little change in home prices, housing is more affordable in Alaska, as opposed to what's happening in the rest of the country. And home sales, he said, have been very stable with little change year to year.

Population

There has been little change in Alaska's population, Fried said. It peaked in 2016 and has come down a little, falling slightly in 2018, down less than half a percent. The details, from a slide Fried presented, show the 2018 population at 736,239, with 10,737 births, 4,398 deaths and outmigration of 8,885, for a total population loss of 7,577.

The state has been losing population to

In 1986, the cost of living in Anchorage was 141 compared to a U.S. index of 100 — and that was topped only by Manhattan and San Francisco.

But that has changed, Fried said, calling it good for investment in the state: In 2019, Anchorage is at 127, and is topped by 15 to 17 communities, with Seattle, by comparison at 159.

-KRISTEN NELSON

Contact Kristen Nelson at knelson@petroleumnews.com